

U.S. Patent Application Serial No. 10/036,516
Response filed December 21, 2004
Reply to OA dated September 22, 2004

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): In a position information providing system comprising a portable communications device capable of transmitting by radio communication position information representing the position of the device, and a position information providing device capable of receiving the position information transmitted from the portable communications device and transmitting the position information to one or a plurality of terminal communications units, a position information providing method ~~characterized in that the method comprises~~ comprising the steps of:

preparing by the portable communications device a list required for checking whether it is approved to provide the position information for said one or plurality of terminal communications units in response to an information input manipulation by ~~[[the]]~~ a user~~[[,]]~~;

causing the portable communications device to transmit data as to the prepared list as converted to a radio signal to the position information providing device and causing the position information providing device to receive the list data and register the list data~~[[,]]~~; and

causing the position information providing device to check whether provision of the position information for the terminal communications unit is approved based on the registered list data, in response to a position information request command from the terminal communications unit and to

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transmit the position information as to the portable communications device to the terminal communications unit only when provision of the position information is found approved.

Claim 2 (currently amended): In a position information providing system comprising a portable communications device capable of measuring position information representing the position of the device based on position data received from a plurality of position reference stations arranged on a satellite and/or the ground and transmitting the position information by radio communication, and a position information providing device capable of receiving and holding the position information transmitted from the portable communications device and transmitting the position information to one or a plurality of terminal communications units, a position information providing method ~~characterized in that the method comprises~~ comprising the steps of:

causing the portable communications device to discontinue the position information measuring operation in response to a position measurement discontinuing manipulation by ~~[[the]]~~ a user or upon arrival of a position measurement discontinuing time set by the user~~[[,]]~~; and

causing the position information providing device to check, in response to a position information request command from the terminal communications unit, whether the position information as to the portable communications device is held by the position information providing device during a specified period of time before the reception of the command until the reception and to transmit the position information to the terminal communications unit only when the position information is found to be held during the specified period.

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Claim 3 (currently amended): A position information providing system comprising a portable communications device capable of transmitting by radio communication position information representing the position of the device, and a position information providing device capable of receiving the position information transmitted from the portable communications device and transmitting the position information to one or a plurality of terminal communications units, the portable communications device comprising:

means for preparing a list required for checking whether it is approved to provide the position information for said one or plurality of terminal communications units in response to an information input manipulation by ~~[[the]]~~ a user~~[[,]]~~; and

transmitting means for converting data as to the prepared list to a radio signal and transmitting the radio signal to the position information providing device~~[[,]]~~;

the position information providing device comprising:

means for receiving the list data from the portable communications device~~[[,]]~~;

list register means for registering the list data~~[[,]]~~;

information processing means for registering the received list data in the list register means~~[[,]]~~;

means for checking whether provision of the position information for the terminal communications unit is approved based on the list data registered in the list register means, in response to a position information request command from the terminal communications unit~~[[,]]~~; and

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means for transmitting the position information as to the portable communications device to the terminal communications unit only when provision of the position information is found approved.

Claim 4 (currently amended): A position information providing system according to claim 3, wherein the list comprises information for identifying only one or a plurality of terminal communications units of which provision of position information is not approved, and the checking means of the position information providing device checks whether provision of the position information for the terminal unit is approved based on whether the terminal unit identifying information is included in the list data.

Claim 5 (currently amended): A position information providing system according to claim 3, wherein when provision of the position information is not found approved, the transmitting means of the position information providing device transmits notification information to this effect to the terminal unit.

Claim 6 (currently amended): A position information providing system according to claim 3, wherein the transmitting means of the portable communications device transmits the data as to the prepared list to the position information providing device in response to a list transmitting manipulation by the user.

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Claim 7 (currently amended): A position information providing system according to claim 3₁ wherein the portable communications device comprises time setting means for setting a list transmitting time input by the user, and time detecting means for detecting arrival of the list transmitting time set by the time setting means, and the transmitting means of the portable communication device transmits the data as to the prepared list to the position information providing device upon the time detecting means detecting the arrival of the list transmitting time.

Claim 8 (currently amended): A position information providing system according to claim 3₁ wherein the transmitting means of the portable communications device transmits a list invalidation command signal as converted to a radio signal to the position information providing device in response to a list invalidating manipulation by the user, and the position information providing means comprises invalidation processing means for invalidating registration of the list data in the list register means upon the receiving means thereof receiving the list invalidation command signal.

Claim 9 (currently amended): A position information providing system according to claim 7₁ wherein the time setting means of the portable communications device sets a list invalidating time input by the user, the time detecting means being operable to detect arrival of the list invalidating time set by the time setting means, and the transmitting means of the portable communications device transmits a list invalidation command signal as converted to a radio signal to the position information providing device upon the time detecting means detecting arrival of the list invalidating

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time, the position information providing means comprising invalidation processing means for invalidating registration of the list data in the list register means upon the receiving means thereof receiving the list invalidation command signal.

Claim 10 (currently amended): A position information providing system comprising a portable communications device capable of transmitting by radio communication position information representing the position of the device, and a position information providing device capable of receiving the position information transmitted from the portable communications device and transmitting the position information to one or a plurality of terminal communications units, the portable communications device comprising:

means for receiving position data from a plurality of position reference stations arranged on a satellite and/or the ground[[,]];

position measuring means for measuring the position information based on the position data received[[,]];

transmitting means for converting the measured position information to a radio signal and transmitting the radio signal to the position information providing device[[,]]; and

control means for discontinuing the information measuring operation of the position measuring means in response to a position measurement discontinuing manipulation by [[the]] a user,

the position information providing device comprising:

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means for receiving a position signal from the portable communications device[[,]];
means for storing the position information as to the portable communications device[[,]];
information processing means for performing the operation of storing the received position
information in the storing means[[,]]; and

checking means operable in response to a position information request command from the
terminal communications unit to check whether the position information as to the portable
communications device is stored in the storing means during a specified period of time before the
reception of the command until the reception[[,]]; and

means for transmitting the position information to the terminal unit only when the position
information as to the portable communications device is stored during the specified period of time.

Claim 11 (currently amended): A position information providing system comprising a
portable communications device capable of transmitting by radio communication position
information representing the position of the device, and a position information providing device
capable of receiving the position information transmitted from the portable communications device
and transmitting the position information to one or a plurality of terminal communications units, the
portable communications device comprising:

means for receiving position data from a plurality of position reference stations arranged on
a satellite and/or the ground[[,]]; and

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position measuring means for measuring the position information based on the position data received[[,]]; and

time setting means for setting a position measurement discontinuing time input by [[the]] a user[[,]]; and

time detecting means for detecting arrival of the position measurement discontinuing time set by the time setting means[[,]]; and

transmitting means for converting the measured position information to a radio signal and transmitting the radio signal to the position information providing device[[,]]; and

control means for discontinuing the information measuring operation of the position measuring means upon the time detecting means detecting arrival of the position measurement discontinuing time,

the position information providing device comprising:

means for receiving the position information from the portable communications device[[,]]; and

means for storing the position information as to the portable communications device[[,]]; and

information processing means for performing the operation of storing the received position information in the storing means[[,]]; and

checking means operable in response to a position information request command from the terminal communications unit to check whether the position information as to the portable communications device is stored in the storing means during a specified period of time before the reception of the command until the reception[[,]]; and

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means for transmitting the position information to the terminal unit only when the position information as to the portable communications device is stored during the specified period of time.

Claim 12 (currently amended): A position information providing system according to claim 10 or 11, wherein when the position information as to the portable communications device is not found stored during the specified period of time, the transmitting means of the providing device transmits to the terminal unit notification information to the effect that provision of the position information is not approved.

Claim 13 (currently amended): A position information providing system according to claim 10 or 11, wherein the control means of the portable communications device causes the position measuring means to start the operation of measuring the information in response to a position measurement resuming manipulation by the user.

Claim 14 (currently amended): A position information providing system according to claim 11, wherein the time setting means of the portable communications device sets a position measurement resuming time input by the user, the time detecting means detects arrival of the position measurement resuming time set by the time setting means, and the control means causes the position measuring means to start the information measuring operation upon the time detecting means detecting arrival of the position measurement resuming time.

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Claim 15 (currently amended): A portable communications device capable of transmitting by radio communication position information representing the position of the device to one or a plurality of terminal communications units via a position information providing device, the portable communications device comprising:

means for preparing a list required for checking whether it is approved to provide the position information for said one or plurality of terminal communications units in response to an information input manipulation by [[the]] a user[.,,]; and

transmitting means for converting data as to the prepared list to a radio signal and transmitting the radio signal to the position information providing device.

Claim 16 (currently amended): A portable communications device capable of transmitting by radio communication position information representing the position of the device to one or a plurality of terminal communications units via a position information providing device, the portable communications device comprising:

means for receiving position data from a plurality of position reference stations arranged on a satellite and/or the ground[.,,];

position measuring means for measuring the position information based on the position data received[.,,];

transmitting means for converting the measured position information to a radio signal and transmitting the radio signal to the position information providing device[.,,]; and

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control means for discontinuing the information measuring operation of the position measuring means in response to a position measurement discontinuing manipulation by ~~[[the]]~~ a user.

Claim 17 (currently amended): A portable communications device capable of transmitting by radio communication position information representing the position of the device to one or a plurality of terminal communications units via a position information providing device, the portable communications device comprising:

means for receiving position data from a plurality of position reference stations arranged on a satellite and/or the ground~~[[,]]~~;

position measuring means for measuring the position information based on the position data received~~[[,]]~~;

time setting means for setting a position measurement discontinuing time input by ~~[[the]]~~ a user~~[[,]]~~;

time detecting means for detecting arrival of the position measurement discontinuing time set by the time setting means~~[[,]]~~;

transmitting means for converting the measured position information to a radio signal and transmitting the radio signal to the position information providing device~~[[,]]~~; and

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control means for discontinuing the information measuring operation of the position measuring means upon the time detecting means detecting arrival of the position measurement discontinuing time.

Claim 18 (currently amended): A position information providing device capable of receiving from a portable communications device position information representing the position of the portable device and transmitting the position information to one or a plurality of terminal communications units, the position information providing device comprising:

means for receiving list data transmitted from the portable communications device[[,]];

list register means for registering the list data[[,]];

information processing means for registering the received list data in the list register means[[,]]; and

means for checking whether provision of the position information for the terminal communications unit is approved based on the list data registered in the list register means, in response to a position information request command from the terminal communications unit[[,]]; and

means for transmitting the position information as to the portable communications device to the terminal communications unit only when provision of the position information is found approved.

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Claim 19 (currently amended): A position information providing device capable of receiving from a portable communications device position information representing the position of the portable device and transmitting the position information to one or a plurality of terminal communications units, ~~the position information providing device being characterized in that the~~ providing device ~~comprises~~ comprising:

means for receiving the position information from the portable communications device[[,]];

means for storing the position information as to the portable communications device[[,]];

information processing means for performing the operation of storing the received position information in the storing means[[,]];

checking means operable in response to a position information request command from the terminal communications unit to check whether the position information as to the portable communications device is stored in the storing means during a specified period of time before the reception of the command until the reception[[,]]; and

means for transmitting the position information to the terminal unit only when the position information as to the portable communications device is stored during the specified period of time.

Claim 20 (currently amended): In a portable communications device capable of transmitting position information representing the position of the device to one or a plurality of terminal communications units by radio communication, ~~a position information providing method characterized in that the method~~ ~~comprises~~ comprising the steps of:

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preparing a list required for checking whether it is approved to provide the position information for said one or plurality of terminal communications units in response to an information input manipulation by the user and registering the data on the list[[],]; and

checking whether provision of the position information for the terminal communications unit is approved based on the registered list data, in response to a position information request command from the terminal communications unit and transmitting the position information as converted to a radio signal to the terminal communications unit only when provision of the position information is found approved.

Claim 21 (currently amended): In a portable communications device capable of measuring and holding position information representing the position of the device based on position data received from a plurality of position reference stations on a satellite and/or the ground and transmitting the position information to one or a plurality of terminal communications units by radio communication, ~~a position information providing method characterized in that the method comprises~~ comprising the steps of:

discontinuing the position information measuring operation in response to a position measurement discontinuing manipulation by [[the]] a user or upon arrival of a position measurement discontinuing time set by the user[[],]; and

checking, in response to a position information request command from the terminal communications unit, whether the position information as to the portable communications device

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is held during a specified period of time before the reception of the command until the reception and transmitting the position information as converted to a radio signal to the terminal communications unit only when the position information is found to be stored during the specified period.

Claim 22 (currently amended): A portable communications device capable of transmitting position information representing the position of the device to one or a plurality of terminal communications units by radio communication, the portable communications device comprising:

means for preparing a list required for checking whether it is approved to provide the position information for said one or plurality of terminal communications units in response to an information input manipulation by [[the]] a user[.,,];

list register means for registering the data on the list[.,,];

information processing means for registering the prepared list data in the list register means[.,,];

means for checking whether provision of the position information for the terminal communications unit is approved based on the list data registered in the list register means, in response to a position information request command from the terminal communications unit[.,,];
and

means for transmitting the position information as converted to a radio signal to the terminal communications unit only when provision of the position information is found approved.

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Claim 23 (currently amended): A portable communications device according to claim 22, wherein the list comprises information for identifying only one or a plurality of terminal communications units of which provision of position information is not approved, and the checking means checks whether provision of the position information for the terminal unit is approved based on whether the terminal communications unit identifying information is included in the list data.

Claim 24 (currently amended): A portable communications device according to claim 22, wherein when provision of the position information is not found approved, the transmitting means transmits notification information to this effect and as converted to a radio signal to the terminal communications unit.

Claim 25 (currently amended): A portable communications device according to claim 22, wherein the information processing means validates the list data registered in the list register means in response to a list validating manipulation by the user, and the checking means does the checking based on the list data when the list data is valid.

Claim 26 (currently amended): A portable communications device according to claim 22, which further comprises time setting means for setting a list validating time input by the user, and time detecting means for detecting arrival of the list validating time set by the time setting means, and wherein the information processing means validates the list data registered in the list register

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means upon the time detecting means detecting arrival of the list validating time, and the checking means does the checking based on the list data when the list data is valid.

Claim 27 (currently amended): A portable communications device according to claim 25 or 26, wherein the information processing means invalidates the list data registered in the list register means in response to a list invalidating manipulation by the user.

Claim 28 (currently amended): A portable communications device according to claim 26, wherein the time setting means sets a list invalidating time input by the user, the time detecting means detects arrival of the list invalidating time set by the time setting means, and the information processing means invalidates the list data registered in the list register means upon the time detecting means detecting arrival of the list invalidating time.

Claim 29 (currently amended): A portable communications device capable of transmitting position information representing the position of the device to one or a plurality of terminal communications units by radio communication, the portable communications device comprising:

means for receiving position data from a plurality of position reference stations arranged on a satellite and/or the ground[[,]];

position measuring means for measuring the position information based on the position data received[[,]];

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means for storing the position information[[,]];

information processing means for performing the operation of storing the measured position information in the storing means[[,]];

control means for discontinuing the information measuring operation of the position measuring means in response to a position measurement discontinuing manipulation by [[the]] a user[[,]];

checking means operable in response to a position information request command from the terminal communications unit to check whether the position information is stored in the storing means during a specified period of time before the reception of the command until the reception[[,]]; and

means for transmitting the position information as converted to a radio signal to the terminal communications unit only when the position information is stored during the specified period of time.

Claim 30 (currently amended): A portable communications device capable of transmitting position information representing the position of the device to one or a plurality of terminal communications units by radio communication, the portable communications device comprising:

means for receiving position data from a plurality of position reference stations arranged on a satellite and/or the ground[[,]];

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position measuring means for measuring the position information based on the position data received[[,]];

means for storing the position information[[,]];

information processing means for performing the operation of storing the measured position information in the storing means[[,]];

time setting means for setting a position measurement discontinuing time input by [[the]] a user[[,]];

time detecting means for detecting arrival of the position measurement discontinuing time set by the time setting means[[,]];

control means for discontinuing the information measuring operation of the position measuring means upon the time detecting means detecting arrival of the position measurement discontinuing time[[,]];

checking means operable in response to a position information request command from the terminal communications unit to check whether the position information is stored in the storing means during a specified period of time before the reception of the command until the reception[[,]]; and

means for transmitting the position information as converted to a radio signal to the terminal communications unit only when the position information is stored during the specified period of time.

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Claim 31 (currently amended): A portable communications device according to claim 29 or 30, wherein when the position information is not found stored during the specified period of time, the transmitting means converts to a radio signal notification information to the effect that provision of the position information is not approved and transmits the radio signal to the terminal communications unit.

Claim 32 (currently amended): A portable communications device according to claim 29 or 30, wherein the control means causes the position measuring means to start the information measuring operation in response to a position measurement resuming manipulation by the user.

Claim 33 (currently amended): A portable communications device according to claim 30, wherein the time setting means sets a position measurement resuming time input by the user, the time detecting means detects arrival of the position measurement resuming time set by the time setting means, and the control means causes the position measuring means to start the information measuring operation upon the time detecting means detecting arrival of the position measurement resuming time.